

# ECH3~6K-SML-EU

## Single Phase Residential Hybrid Inverter



### High Return

- Max efficiency 97.4%, Battery efficiency 95.1%
- 5 basic modes to meet the needs of various scenarios
- Smart TOU mode, further increasing revenue

### High Capability

- Up to 12kW output power in backup port with grid supply
- Save cost of separating loads, freedom of electricity in case of power failure
- Supports SG Ready heat pump and smart load control

### High Protection

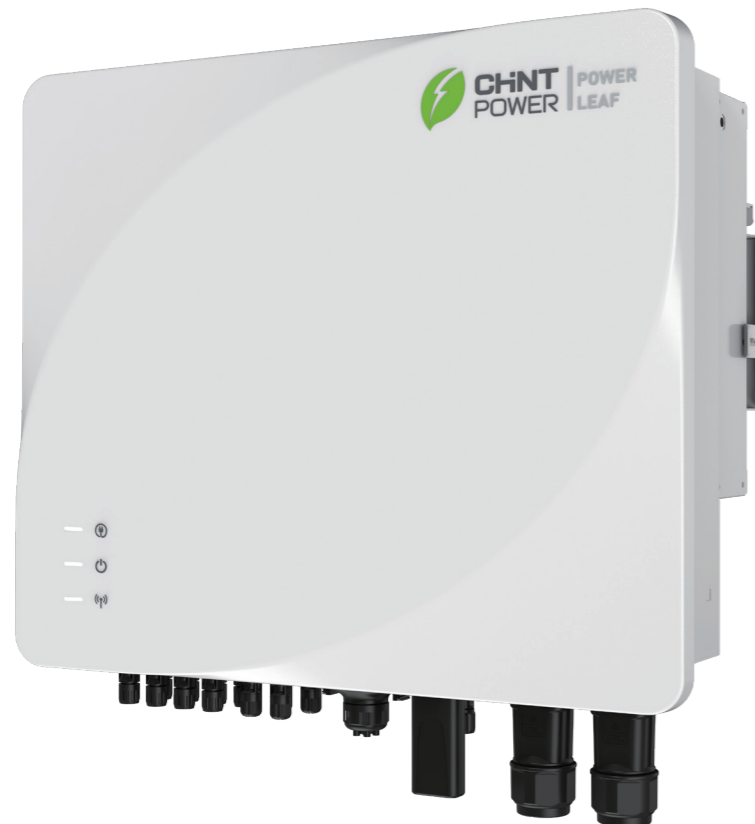
- Standard AFCI to protect your home
- Built-in Type II SPD on DC side
- IP66 protection for challenging environments

Model	ECH3K-SML-EU	ECH3.6K-SML-EU	ECH4.6K-SML-EU	ECH5K-SML-EU	ECH6K-SML-EU
<b>Efficiency</b>					
Max. Efficiency (PV to Grid)	97.40%	97.40%	97.40%	97.40%	97.40%
Eur.Efficiency (PV to Grid)	96.50%	96.50%	96.80%	96.80%	96.70%
Max. Efficiency (Battery to Load)	95.10%	95.10%	95.10%	95.10%	95.10%
<b>PV</b>					
Rated Input Voltage	360V	360V	360V	360V	360V
Max. Input Voltage	600V	600V	600V	600V	600V
Max. Input Power	9.00kW	9.68kW	10.60kW	10.80kW	10.80kW
Max. Input Current per MPPT	16/16A	16/16A	16/16A	16/16A	16/16A
Max.Short Circuit Current per MPPT	20/20A	20/20A	20/20A	20/20A	20/20A
No. of MPPTs	2	2	2	2	2
No. of Strings per MPPT	1	1	1	1	1
Start Input Voltage	100V	100V	100V	100V	100V
PV Operating Voltage Range	80-550V	80-550V	80-550V	80-550V	80-550V
<b>Battery</b>					
Battery Type	Lithium-ion/Lead-Acid				
Battery Voltage Range	40-60V	40-60V	40-60V	40-60V	40-60V
Max. Charge/Discharge Current	120/60A	120/75A	120/95A	120/120A	120/120A
Max. Charge/Discharge Power	6.0/3.0kW	6.0/3.6kW	6.0/4.6kW	6.0/5.0kW	6.0/6.0kW
<b>Grid</b>					
Max. Input Current	54.6A	54.6A	54.6A	54.6A	54.6A
Max. Input Apparent Power from Utility Grid	12.0kVA	12.0kVA	12.0kVA	12.0kVA	12.0kVA
Rated Output Apparent Power	3.00kVA	3.68kVA	4.60kVA	5.00kVA	6.00kVA
Max. Output Apparent Power	3.3kVA	4.0kVA	4.6kVA	5.5kVA	6.0kVA
Rated Output Voltage	L/N/PE~220/230V				
Rated Output Voltage Range	176-276V(Adjustable)				
Rated Grid Frequency	50Hz/60Hz				
THDI	<2%(Linear load)				
Power Factor	> 0.99 Rated power (Adjustable 0.8 Leading - 0.8Lagging)				
<b>Backup Port</b>					
Max. Output Current On Grid	54.6A	54.6A	54.6A	54.6A	54.6A
Max. Output Apparent Power On Grid	12.0kVA	12.0kVA	12.0kVA	12.0kVA	12.0kVA
Rated Output Apparent Power Off Grid	3.00kVA	3.68kVA	4.60kVA	5.00kVA	6.00kVA
Max. Output Apparent Power Off Grid	3.3kVA	4.0kVA	4.6kVA	5.5kVA	6.0kVA
Rated Output Voltage	220/230V	220/230V	220/230V	220/230V	220/230V
Rated Output Frequency	50Hz/60Hz				
THDV	<2%(Linear load)				
Switching Time	10ms				
<b>Protection</b>					
DC Switch	Support	Support	Support	Support	Support
Anti-islanding Protection	Support	Support	Support	Support	Support
AC Overcurrent Protection	Support	Support	Support	Support	Support
AC Overvoltage Protection	Support	Support	Support	Support	Support
PV String Reverse Protection	Support	Support	Support	Support	Support
Surge Arrester	AC Type II, DC Type II				
Insulation Detection	Support	Support	Support	Support	Support
Leakage Current Protection	Support	Support	Support	Support	Support
AFCI	Support	Support	Support	Support	Support
RSD Function	Option	Option	Option	Option	Option
<b>General</b>					
Topology	High Frequency Isolation (Battery)				
IP Rating	IP66	IP66	IP66	IP66	IP66
Cooling	Natural cooling	Natural cooling	Natural cooling	Natural cooling	Natural cooling
Operating Temperature Range	-25°C-60°C	-25°C-60°C	-25°C-60°C	-25°C-60°C	-25°C-60°C
Relative Humidity Range	0-100%	0-100%	0-100%	0-100%	0-100%
Max. Operating Altitude	4000m				
Noise (Typical)	<35dB	<35dB	<35dB	<35dB	<35dB
Dimensions (W*H*D)	460*460*203mm	460*460*203mm	460*460*203mm	460*460*203mm	460*460*203mm
Weight	26kg	26kg	26kg	26kg	26kg
Display	LED&APP	LED&APP	LED&APP	LED&APP	LED&APP
Communication	RS485,CAN, WIFI/4G(optional)				
<b>Certification</b>					
Safety	IEC/EN62109-1&2, IEC/EN62477-1, IEC/EN61727 / 62116, IEC/EN61000-6-1/2/3				
Grid Code	VDE 4105, CEI 0-21, EN 50549-1, PTPIREE+NCRfG, NTS 2.1, 217001, 217002				

\* The certificates are for reference only. Please consult the local sales staff for detailed certification.

# ECH8~20K-TH-EU

## Three Phase Residential Hybrid Inverter



### High Return

- Max efficiency 98.3%, Battery efficiency 97.5%
- 5 basic modes to meet the needs of various scenarios
- Smart TOU mode, further increasing revenue

### High Capability

- Up to 40kW output power in backup port with grid supply
- Save cost of separating loads, freedom of electricity in case of power failure
- Supports SG Ready heat pump and smart load control
- Three-phase unbalance capacity, single-phase up to 50% of rated power

### High Protection

- Standard AFCI to protect your home
- Built-in Type II SPD on DC side
- IP66 protection for challenging environments

Model	ECH8K-TH-EU	ECH10K-TH-EU	ECH12K-TH-EU	ECH15K-TH-EU	ECH18K-TH-EU	ECH20K-TH-EU
<b>Efficiency</b>						
Max. Efficiency (PV to Grid)	98.20%	98.30%	98.30%	98.30%	98.30%	98.30%
Eur.Efficiency (PV to Grid)	97.50%	97.60%	97.70%	97.70%	97.70%	97.70%
Max. Efficiency (Battery to Load)	97.50%	97.50%	97.80%	97.80%	97.80%	97.80%
<b>PV</b>						
Rated Input Voltage	600V	600V	600V	600V	600V	600V
Max. Input Voltage	1100V	1100V	1100V	1100V	1100V	1100V
Max. Input Power	12.80kW	16.00kW	19.20kW	24.00kW	28.80kW	30.00kW
Max. Input Current per MPPT	16A/16A/16A/16A	16A/16A/16A/16A	16A/16A/16A/16A	16A/16A/16A/16A	16A/16A/16A/16A	16A/16A/16A/16A
Max.Short Circuit Current per MPPT	24A/24A/24A/24A	24A/24A/24A/24A	24A/24A/24A/24A	24A/24A/24A/24A	24A/24A/24A/24A	24A/24A/24A/24A
No. of MPPTs	4	4	4	4	4	4
No. of Strings per MPPT	1	1	1	1	1	1
Start Input Voltage	160V	160V	160V	160V	160V	160V
PV Operating Voltage Range	160-1000V	160-1000V	160-1000V	160-1000V	160-1000V	160-1000V
<b>Battery</b>						
Battery Type	Lithium-ion					
Battery Voltage Range	160-600V	160-600V	160-600V	160-600V	160-600V	160-600V
Max. Charge/Discharge Current	50A/50A	50A/50A	50A/50A	50A/50A	50A/50A	50A/50A
Max. Charge/Discharge Power	12kW/8kW	12kW/10kW	20kW/12kW	20kW/15kW	20kW/18kW	20kW/20kW
<b>Grid</b>						
Max. Input Current	60.8A	60.8A	60.8A	60.8A	60.8A	60.8A
Rated Output Apparent Power	8.0kVA	10.0kVA	12.0kVA	15.0kVA	18.0kVA	20.0kVA
Max. Output Apparent Power	8.8kVA	11.0kVA	13.2kVA	16.5kVA	19.8kVA	20.0kVA
Rated Output Voltage	3W / N / PE; 220 / 380 3W / N / PE; 230 / 400 3W / N / PE; 240 / 415 adjustable					
Rated Grid Frequency	50Hz/60Hz					
THDI	<2% (Rated Power)					
Power Factor	> 0.99 Rated power (Adjustable 0.8 Leading - 0.8Lagging)					
<b>Backup Port</b>						
Max. Output Current (On Grid)	60.8A	60.8A	60.8A	60.8A	60.8A	60.8A
Max. Output Apparent Power (On Grid)	40.0kVA	40.0kVA	40.0kVA	40.0kVA	40.0kVA	40.0kVA
Max. Output Apparent Power (Off Grid)	8.8kVA	11.0kVA	13.2 kVA	16.5kVA	19.8kVA	22.0kVA
Peak Output Apparent Power	22 @60s	22 @60s	22 @60s	22 @60s	22 @60s	22 @60s
Rated Output Voltage	380V/400V/415V, 3W+N+PE					
Rated Output Frequency	50Hz/60Hz					
Max. Output Single Phase Apparent Power	4.0kVA	5.0kVA	6.0kVAz	7.5kVAz	9.0kVA	9.0kVA
THDV	<2% @100% R Load					
Switching Time	10ms	10ms	10ms	10ms	10ms	10ms
<b>Protection</b>						
DC Switch	Support					
Anti-islanding Protection	Support					
AC Overcurrent Protection	Support					
AC Short Circuit Protection	Support					
PV String Reverse Protection	Support					
Surge Arrester	AC Type II, DC Type II					
AFCI	Support					
RSD Function	Option					
<b>General</b>						
Topology	Non-Isolated					
IP Rating	IP66					
Cooling	Forced airflow					
Operating Temperature Range	-25°C-60°C					
Relative Humidity Range	0-100%					
Max. Operating Altitude	4000m					
Noise (Typical)	<45dB					
Dimensions (W*H*D,mm)	≈580/500/250mm					
Weight (kg)	≈37kg					
Display	LED&APP					
Communication	RS485,CAN, WIFI/4G(optional)					
<b>Certification</b>						
Safety	IEC62109-1&2 IEC61000					
Grid Code	EN50549,VDE4105,Tor erzeuger typeA+R25 Tor erzeuger type B,EIFS2018-2,CEI 021,NC RfG, PTPIREE, PSE S.A.,EN50549-1					

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